IGNITION SYSTEM

IG0G7–02

ON–VEHICLE INSPECTION

NOTICE:

"Cold" and "Hot" in these sentences express the temperature of the coils themselves. "Cold" is from –10°C (14°F) to 50°C (122°F) and "Hot" is from 50°C (122°F) to 100°C (212°F).

1. INSPECT IGNITER AND PERFORM SPARK TEST

Check that spark occurs

(1) Disconnect the connector of LPG solenoid valve.
(2) Disconnect the high–tension cord from the spark plug.
(3) Remove the spark plug.
(4) Install the spark plug to the high–tension cord.
(5) Ground the spark plug.
(6) See if spark occurs while the engine is being cranked.

NOTICE:

To prevent fuel from being injected from the carburator during this test, crank the engine for no more than 5 – 10 seconds at a time.

If the spark does not occur, do the test as follows:

SPARK TEST

↓ NO

CHECK CONNECTION OF IGNITION COIL, IGNITER AND DISTRIBUTOR CONNECTORS → BAD → Connect securely.

↓ OK

CHECK RESISTANCE OF HIGH–TENSION CORDS (See step 2)
Maximum resistance: 25 kΩ per cord → BAD → Replace cord(s).

↓ OK

CHECK POWER SUPPLY TO IGNITION COIL AND IGNITER
1. Turn ignition switch to ON.
2. Check that there is battery voltage at ignition coil positive (+) terminal.

→ BAD → Check wiring between ignition switch to ignition coil and igniter.

↓ OK

CHECK RESISTANCE OF IGNITION COIL (See step 4)

Resistance:	**Cold**	**Hot**
Primary	**0.36 – 0.55 Ω**	**0.45 – 0.65 Ω**
Secondary	**9.0 – 15.4 Ω**	**11.4 – 18.1 Ω**

→ BAD → Replace ignition coil.

↓ OK

CHECK RESISTANCE OF SIGNAL GENERATOR (PICKUP COIL) (See step 5)

Resistance:	**Cold**	**Hot**
	135 – 220 Ω	**175 – 255 Ω**

→ BAD → Replace distributor housing assembly.

↓ OK

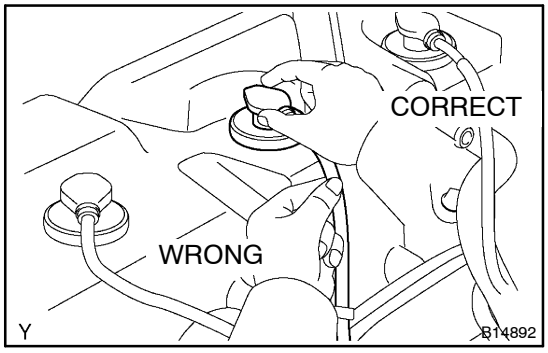
CHECK AIR GAP OF DISTRIBUTOR (See step 5)
Air gap: 0.2 – 0.4 mm (0.008 – 0.016 in.) → BAD → Replace distributor housing assembly.

↓ OK

CHECK IGT SIGNAL FROM ECU (See page DI–62) → BAD → Check wiring between ECU, ignition coil and igniter, and then try another ECU.

↓

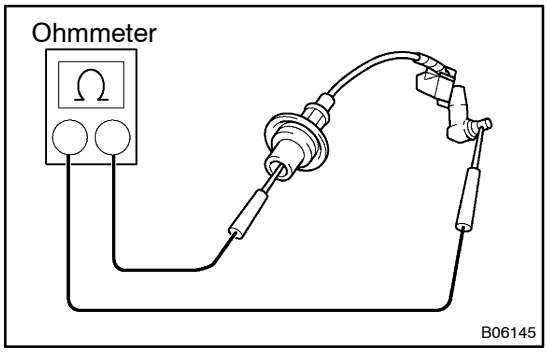
TRY ANOTHER IGNITER



2. INSPECT HIGH–TENSION CORDS

(a) Remove the high–tension cords.
Disconnect the high–tension cords at the rubber boot. Do not pull out the high–tension cords.

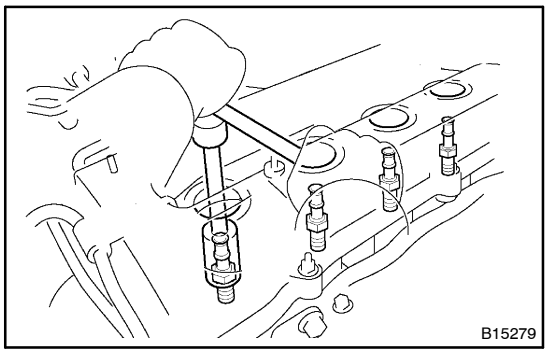
NOTICE:
Pulling out or bending the cords may damage the conductor inside.



(b) Using an ohmmeter, measure the high–tension cord resistance.
Maximum resistance: 25 kΩ per cord

If the resistance is greater than maximum, replace the high–tension cord.

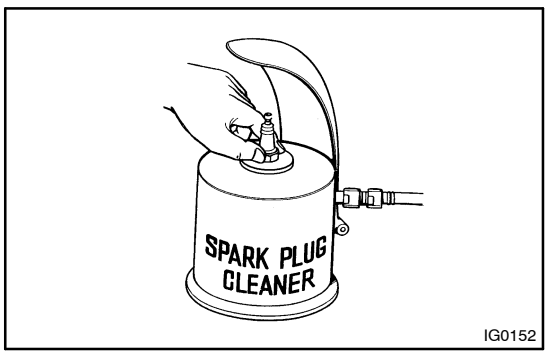
(c) Reinstall the high–tension cords.



3. INSPECT SPARK PLUGS

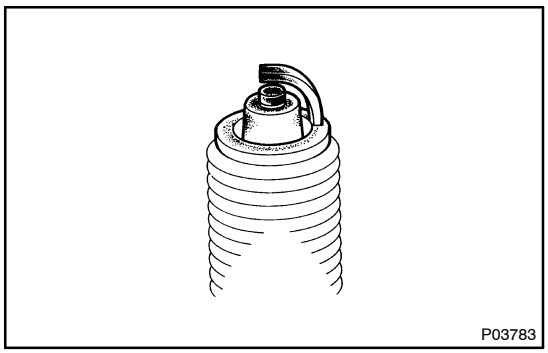
NOTICE:
- **Never use a wire brush for cleaning.**
- **Never attempt to adjust the electrode gap on used spark plug.**
- **Spark plug should be replaced every 100,000 km (60,000 miles).**

(a) Disconnect the high–tension cords from the spark plugs.
(b) Using a plug wrench, remove the 4 spark plugs.



(c) Using a spark plug cleaner, clean the spark plug.
Air pressure: Below 588 kpa (6 kgf/cm^{2}·, 85 psi)
Duration: 20 seconds or less

HINT:
If there are traces of oil, remove them with gasoline before using the spark plug cleaner.

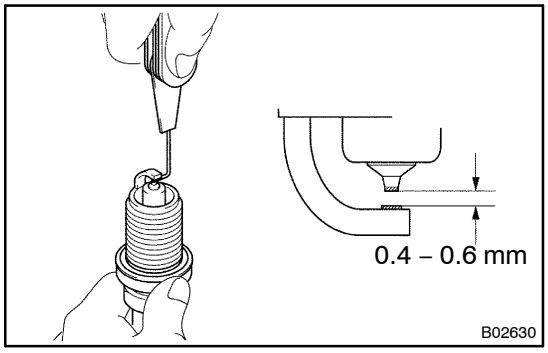


(d) Check the spark plug for electrode wear, thread damage and insulator damage.

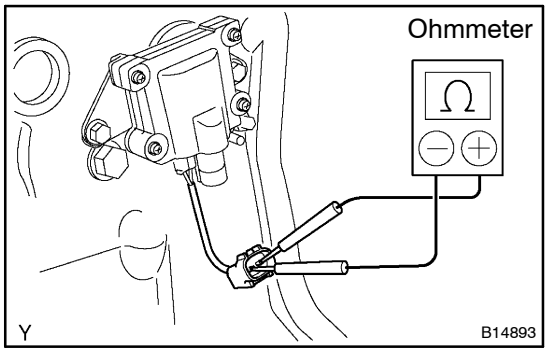
If abnormal, replace the spark plug.

Recommended spark plug:

DENSO made	SK20R5–G



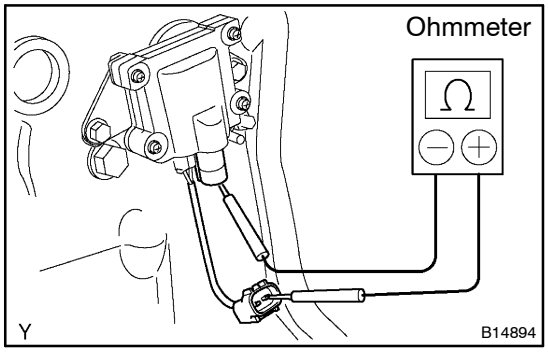
(e) Inspect the electrode gaps.
Standard electrode gap:
0.4 – 0.6 mm (0.016 – 0.024 in.)
Maximum electrode gap:
0.63 mm (0.0248 in.)
If the gap is greater than maximum, replace the spark plug.
(f) Using a plug wrench, reinstall the 4 spark plugs.
Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)
(g) Reconnect the high–tension cords to the spark plugs.



4. INSPECT IGNITION COIL
(a) Disconnect the high–tension cords from the ignition coil.
(b) Disconnect the connector.
(c) Inspect the primary coil resistance.
Using an ohmmeter, measure the resistance between the positive (+) and negative (–) terminals.
Primary coil resistance:

Cold	0.36 – 0.55 Ω
Hot	0.45 – 0.65 Ω

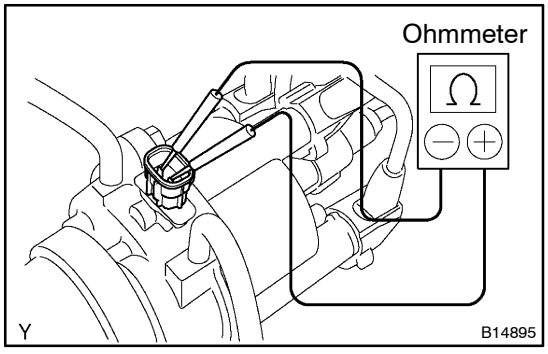
If the resistance is not as specified, replace the ignition coil.



(d) Inspect the secondary coil resistance.
Using an ohmmeter, measure the resistance between the positive (+) and high–tension terminals.
Secondary coil resistance:

Cold	9.0 – 15.4 Ω
Hot	11.4 – 18.1 Ω

If the resistance is not as specified, replace the ignition coil.
(e) Connect the connector.
(f) Reconnect the high–tension cords to the ignition coil.

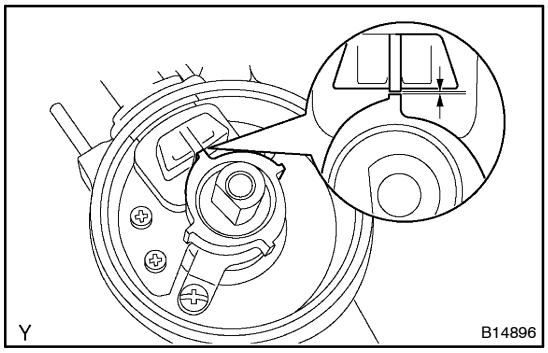


5. INSPECT SIGNAL GENERATOR
(a) Disconnect the connector.
(b) Inspect the signal generator (pickup coil) resistance.
Measure the resistance between the terminals.
Pickup coil resistance:

Cold	135 – 220 Ω
Hot	175 – 255 Ω

If the resistance is not as specified, replace the distributor housing assembly.

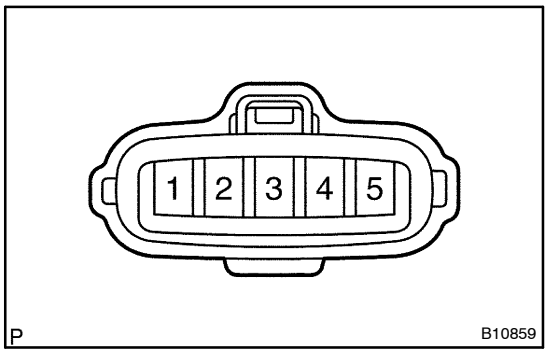
(c) Remove the distributor cap.
(d) Remove the rotor and dust–proof cover.



(e) Using a feeler gauge, measure the air gap between the signal rotor and pickup coil projection.
Air gap: 0.2 – 0.4 mm (0.008 – 0.016 in.)

If the air gap is not as specified, replace the distributor housing assembly.

(f) Reinstall the dust–proof cover and rotor.
(g) Reinstall the distributor cap.



6. INSPECT IGNITER

(a) Disconnect the igniter connector.
(b) Turn the ignition switch ON.
(c) Measure the voltage between the terminal 3 and the body ground.
Voltage: 10 – 14 V